

Controllers



Whether it be PC, laptop or PLC, Solartron Metrology offers a range of plug-and-go interfaces for directly connecting an Orbit network to the controller of your choice.



Arriving
2010

	PCI Network card	USB Interface Module (USBIM)	RS232 Interface Module (RS232IM)	Ethernet Interface Module (ETHIM)
Computer Interface				
Bus	PCI	USB 2.0 full speed	RS232 (up to 115.2 kB)	Ethernet
Operating system	Microsoft Windows			
Network Interface				
Signal	RS485			
Protocol	Orbit			
Number of Orbit modules (with external PSIM) ¹	Up to 100	Up to 31	Up to 100	To be confirmed
Number of Orbit modules without external PSIM ²	Up to 10 depending on module type	Up to 4 depending on module type	0	
Baud Rate	187.5kB or 1.5MB		187.5kB	
Measurement Modes supported ³	All modes	Standard/Buffered		
Power Requirement				
Voltage Range (VDC)	4.7 to 5.25			To be confirmed
No Load Current (mA)	250	250	62	
Environmental				
Operating Temp. Range (°C)	0 to +60			To be confirmed
Storage Temp. Range (°C)	-20 to +85			
IP Rating	-	43		
Mechanical & Connections				
Computer connections	PCI card slot	USB socket type A	RS232 port	Ethernet port
Dimensions (mm)	-	65 x 61 x 18 excluding connector (refer to PIE drawings on page 30)		
Weight (g)	89	98g max(Din Rail option)		
Material	-	Nylon and ABS plastic		

¹ 1 PSIM required per channel.

² The specifications quoted are dependant on the power available from the computer in use.

³ Orbit provides three measurement modes. **Standard** where modules are communicated with on an individual basis. Each module is asked for its measurement data by the controller as required. **Buffered** where modules are told by the controller to take a series of measurements and store them in internal module memory. This data is then extracted in one block by the controller when the required measurements have been taken. **Dynamic** where modules take measurements on receipt of a common synchronization pulse sent to the modules from the controller. Each module in turn sends its data back to the controller within a specific time frame. This process continues until the required number of measurements have been taken.

Modules



Solartron also offers a range of modules for third party sensors and for general instrumentation tasks.

The Analogue Input Module integrates third party transducers (e.g. temperature, force, pressure) to the Orbit network. The Digital Input/ Output

module enables switches or control lines and the Encoder Input Module ties in rotary or line scale incremental type encoders (TTL).



	Digimatic input Module (DIM)	Analogue Input Module (AIM)	Encoder Input Module (EIM)	Digital input-output Module (DIOM)
Power Requirement				
Voltage Range (VDC)	5 ±0.25			
Current Consumption ¹ (mA)	41	Up to 154 depending on input type	49	42 (no load)
Signal Input ²				
Input Type	Digimatic Interface	Analogue Voltage or Current	Incremental Encoder	8 channel Input/Output
Input Voltage (VDC)	-	0-24, 0-10, 0-5, ±10, ±5	30 max	0 to 30
Input Currents (mA)	-	4-20, ±20, 0-20	< 10	1 per Channel
Options	-	Special PT100 module available	Single ended or differential, HTL	-
Signal Output				
Voltage Output	-	-	-	Open drain up to 30 V
Current Output	-	-	-	50 mA for each output
Reading Speed	-	-	Up to 3906 readings/second	
Interpolation Rate	-	-	x1, x2, x4 programmable	-
Measurements performance				
Warm-up	-	95% accuracy after 5 mins	-	-
Linearity (%FSO)	-	0.05	-	-
Bandwidth	-	460 Hz	1.2 MHz max frequency	DC
Measurement Modes	Standard	Standard/Dynamic/Buffered	Standard/Dynamic	Standard/Dynamic
Environmental				
Operating Temp. Range (°C)	0 to +60			
Storage Temp. Range (°C)	-20 to +85			
IP Rating	43			
Mechanical & Connections				
Transducer	Various connector options			
Enclosure - Size (mm)	65 x 61 x 18 excluding connector (refer to PIE drawings on page 30)			
Weight (g)	160			
Material	Nylon and ABS plastic			

¹ Excludes sensor consumption. ² Transducer interface.

PSIM (Power Supply Interface Module)

For use with multi-channel systems needing more power than available from the host computer. The power supply can also extend the network beyond the normal 10m per port limit depending on cable type.

PSIM Transformer (not shown)

For use with Power Supply Interface Module versions PSIM-AC.

Other accessories available include high performance data cables to ensure high speed orbit communication.

PSIM dimensions are identical to PIE plus T-Con, however the unit does not separate



	PSIM-AC	PSIM-DC	PSIM-5V
Output voltage	5.1VDC @ 1.8A max.		
Operating temp. range (°C)	0 to +60		
Drive capability	Up to 31 Orbit modules dependent on type		
Supply voltage	90 to 264VAC @ 1 A max.	10 to 30VDC	0 to 30
Supply frequency (Hz)	47 to 440	-	-
Termination	IEC320 plug (supplied with 2m lead and local AC supply connector)	2m flying lead	5m flying lead (input directly to the module. There is no transformer)
Cable length (m)	2 (between module and power supply)		-
Dimensions	As PIE plus T-CON (see page 30). Module does not separate		



PIE (Probe Interface Electronics)

Fitted to all Orbit products



T-Con connector

The Orbit Network 'building block'

35mm DIN rail connector

Supplied as standard

Also see...

[Dimensions and drawings](#)

[Page 30](#) ▶

Orbit® support pack for Windows®

Solartron Metrology provides software support for Microsoft Windows. This software is supplied with the Orbit Network Card, the USB Interface Module and the RS232 Interface Module.

The Orbit Windows Support Pack software includes a COM Object Library for COM applications and Dynamic Link Libraries (DLLs) for lower level programming. Support is also provided for all major programming languages, such as VBA, VB, C++, Borland C Builder and Delphi. Example programs for these languages are available upon request.

Download the latest drivers from www.solartronmetrology.com

Orbit® support pack for Excel®

The Orbit Excel Support Pack enables the user to take readings from the Orbit Network and place values directly into cells of a Microsoft Excel spreadsheet.

Following installation of the Excel support pack, a toolbar becomes available to the user and enables commands such as "Take Readings", "Zero Readings", "Close Link", etc., The Orbit Excel Support Pack disc contains examples to help you get started, each designed to show different aspects of the software. Download the latest drivers from www.solartronmetrology.com

Orbit® examples for LabVIEW®

Solartron Metrology provides program examples to enable users to develop applications under the National Instruments LabVIEW environment. Examples are also provided to allow quick test application tests, such as taking measurement readings from Digital Probes or Linear Encoders into LabVIEW.

Compatible with Windows XP, Vista, Windows 7 32 bit. Check with your local sales office for 64 bit compatibility

Microsoft®, Windows® 98, Windows® ME, Windows® 2000, Windows® XP, Windows NT®, Excel®, VBA and VB are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries.

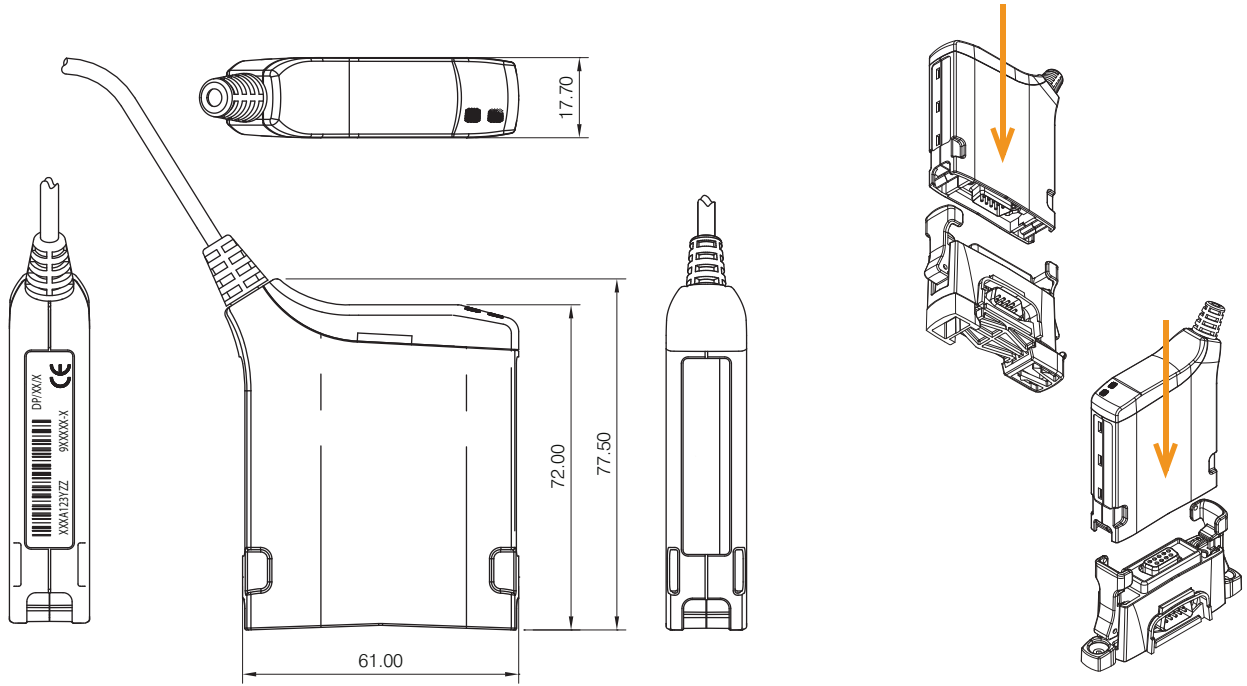
Delphi®, C++ Builder® are registered trademarks of Borland Software Corporation.

LabVIEW® is a registered trademark of National Instruments.

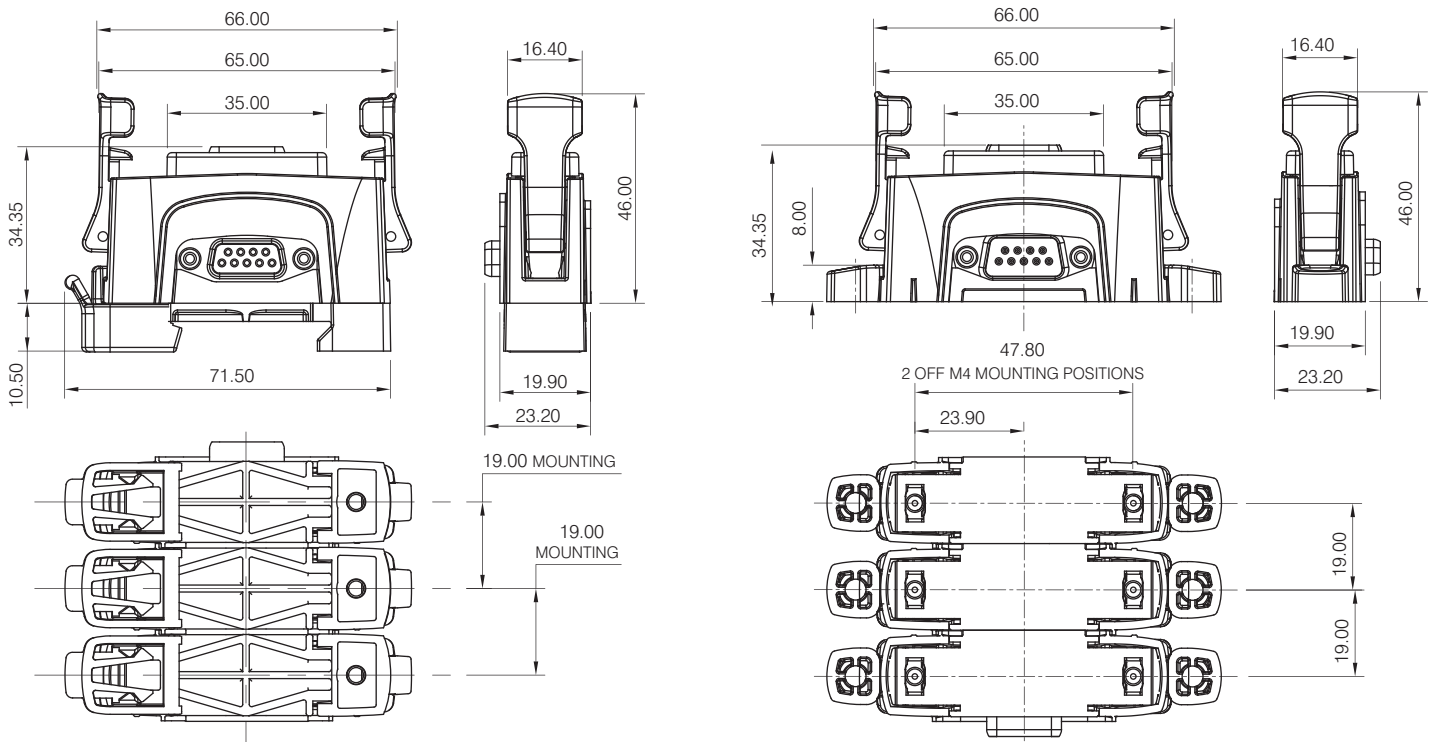
Orbit® is a registered trademark of Solartron Metrology.



PIE (Probe Interface Electronics)



T-CON Orbit network connector



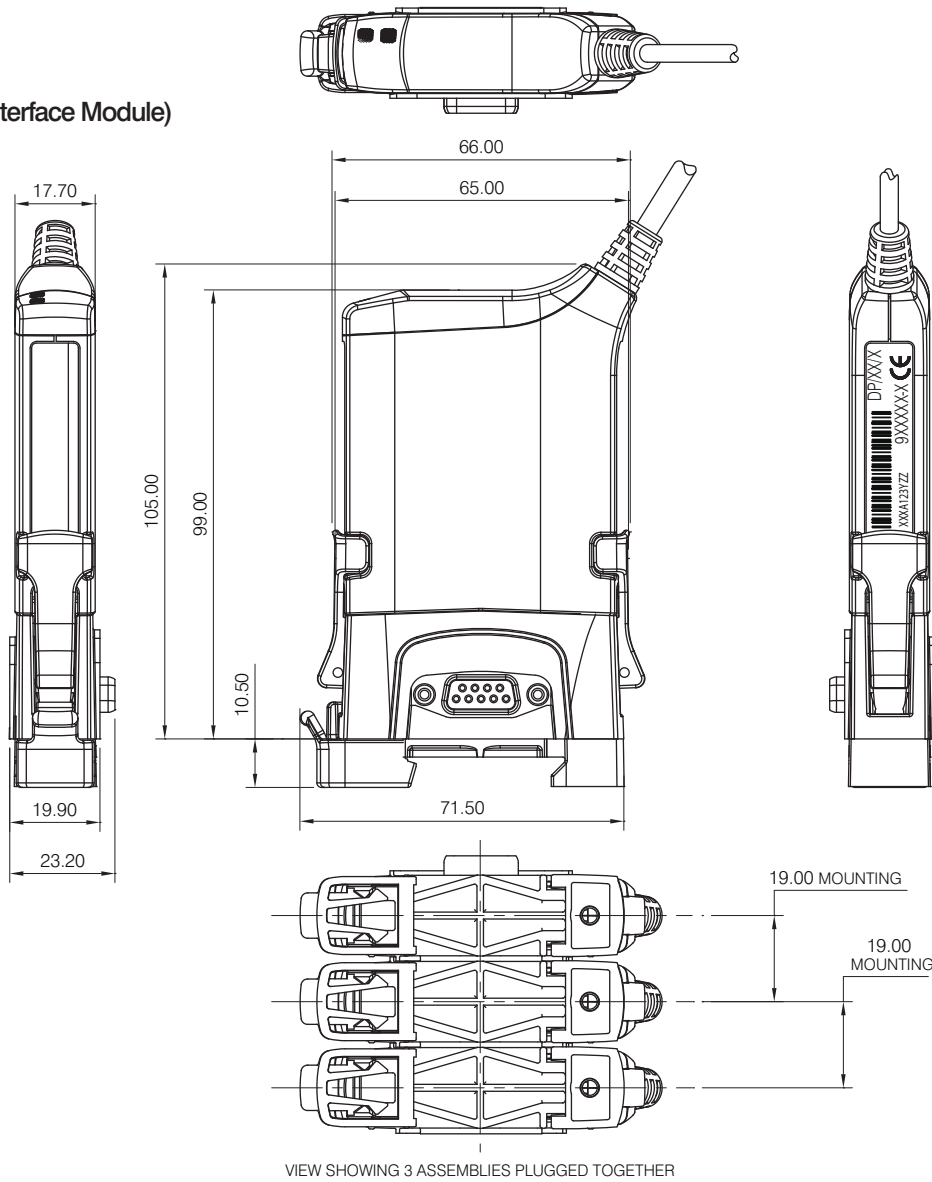
VIEW SHOWING 3 ASSEMBLIES PLUGGED TOGETHER

VIEW SHOWING 3 ASSEMBLIES PLUGGED TOGETHER

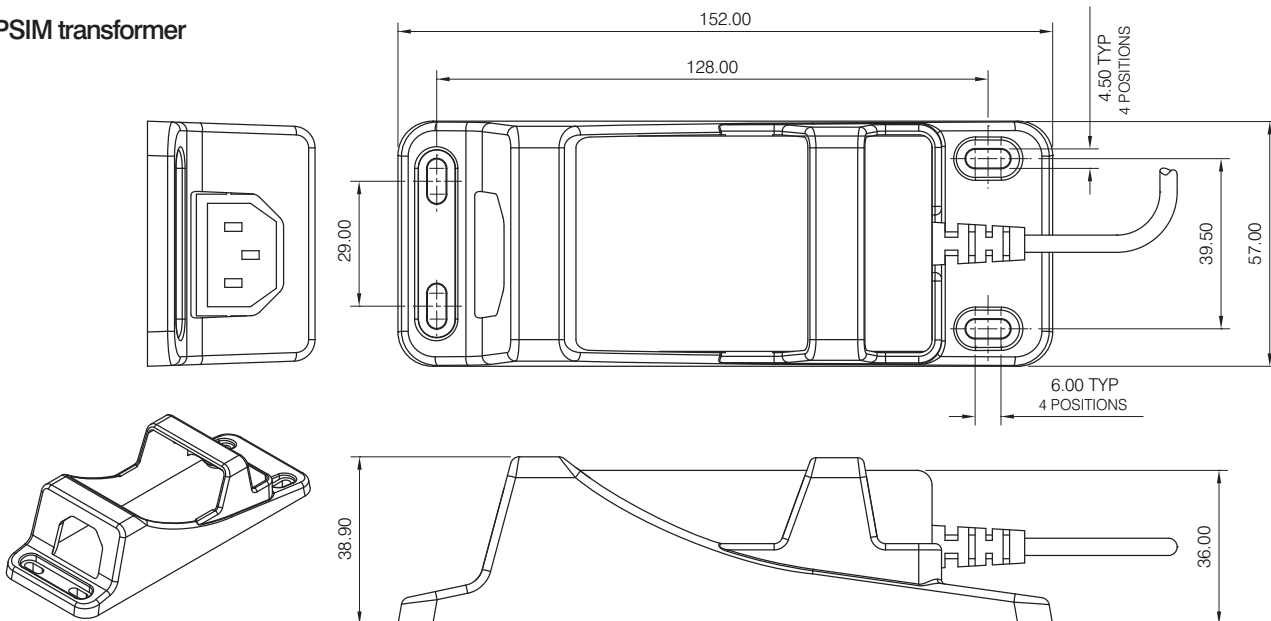
T-CON with 32 mm DIN raise connector

T-CON with mounting feet option

PSIM (Power Supply Interface Module)



PSIM transformer



3D VIEW OF MOUNTING BRACKET